Amendments to the Claims

Claims 1-18 (Cancelled).

19. (New) A method for affinity management in a distributed computer system, comprising:

providing an identifier for each of a plurality of addressing entities, wherein the identifier for each member of a group of the addressing entities with an affinity is the same group identifier;

determining a number of service providers which are available to be addressed by an addressing entity to provide an instance of a service; and

managing a distribution of addressing entities to service providers by:

applying a hash function to the identifier of an addressing entity to obtain a standard integer;

dividing the standard integer by the number of service providers and obtaining a modulus;

selecting a service provider by reference to the modulus; and

sending the addressing entity to the instance of the service provided by the selected service provider.

20. (New) A method as claimed in claim 19, wherein the step of determining the number of service providers is carried out periodically and the number of service providers is constant within a period.

21. (New) A method as claimed in claim 19, wherein the method includes providing an index of the available service providers referenced by modulus values.

22. (New) A method as claimed in claim 19, wherein if a selected service provider is unavailable, the addressing entity is sent to the next service provider in a predetermined order.

23. (New) A method as claimed in claim 19, wherein if a service provider fails, a process is activated to retrieve previously delivered addressing entities.

24. (New) A method as claimed in claim 19, wherein if a service provider fails, that service provider can be reinstated after ensuring that there are no addressing entities with a group affinity in alternative service providers.

25. (New) A method as claimed in claim 19, wherein if a service provider fails, addressing entities sent to that service provider are re-distributed.

26. (New) A method as claimed in claim 19, wherein the distributed computing system is a messaging system, the addressing entities are messages and the service providers are clustered queue managers hosting instances of one or more cluster queues.

27. (New) A method as claimed in claim 26, wherein the group identifier is in the form of a Universally Unique Identifier (UUID).

28. (New) A method as claimed in claim 19, wherein the addressing entities are client applications and the service providers are Web Services hosting instances of a service.

29. (New) A system for affinity management in a distributed computer system, the system comprising:

a plurality of addressing entities each with an identifier, wherein the identifier for each member of a group of addressing entities with an affinity is the same group identifier;

a list of a plurality of service providers which are available to be addressed by an addressing entity to provide an instance of a service;

means for managing a distribution of addressing entities to service providers by using an algorithm with the following steps:

applying a hash function to the identifier of an addressing entity to obtain a standard integer;

dividing the standard integer by the number of service providers in the list and obtaining a modulus; and

selecting a service provider by reference to the modulus; and

means for sending the addressing entity to the instance of the service provided by the selected service provider.

30. (New) A system as claimed in claim 29, wherein the list of service providers is updated periodically and the number of service providers on the list is constant within a period.

31. (New) A system as claimed in claim 29, wherein a mechanism is provided to inform a workload manager of the service providers given in the list.

32. (New) A system as claimed in claim 29, wherein the system includes an index of service providers in the list referenced by modulus values.

33. (New) A system as claimed in claim 29, wherein if a selected service provider is unavailable, a workload manager sends the addressing entity to the next service provider in a predetermined order.

34. (New) A system as claimed in claim 29, wherein if a service provider fails, means are provided to retrieve previously delivered addressing entities.

35. (New) A system as claimed in claim 29, wherein if a service provider fails, means are provided to assure that there are no addressing entities with a group affinity in alternative service providers before the failed service provider is reinstated.

36. (New) A system as claimed in claim 29, wherein if a service provider fails, means are provided to re-distribute addressing entities sent to that service provider.

37. (New) A system as claimed in claim 29, wherein the distributed computing system is a messaging system, the addressing entities are messages and the service providers are clustered queue managers hosting instances of one or more cluster queues.

38. (New) A system as claimed in claim 37, wherein the group identifier is in the form of a Universally Unique Identifier (UUID).

39. (New) A system as claimed in claim 29, wherein the addressing entities are client applications and the service providers are Web Services hosting instances of a service.

40. (New) A computer program product stored on a computer readable storage medium comprising computer readable program code means for performing the steps of:

provising an identifier for each of a plurality of addressing entities, wherein the identifier for each member of a group of addressing entities with an affinity is the same group identifier;

determining the number of service providers which are available to be addressed by an addressing entity to provide an instance of a service;

managing the distribution of addressing entities to service providers by:

applying a hash function to the identifier of an addressing entity to obtain a standard integer;

dividing the standard integer by the number of service providers and obtaining a modulus;

selecting a service provider by reference to the modulus; and

sending the addressing entity to the instance of the service provided by the selected service provider.